LESSON MAKER PRO

Who Is in the Group?

Find probabilities using the group named in each question.

GRADE 8 · 8A.DSP.H.45

8A.DSP.H.45 "Compute the conditional probability of event A given event B, using two-way tables or tree diagrams."

NAME _____ DATE _____

START WITH THE GIVEN GROUP

A conditional probability starts with a smaller group, the cases where the given event happened. Count the cases where both events happened, then divide by the number in the given group. In a two-way table, the given group may be a row or a column.

WORKED EXAMPLE

Each garden volunteer chose one shift and one task. If a volunteer worked Saturday, what is the probability that the volunteer watered plants?

GARDEN VOLUNTEERS

Shift	Watered	Planted
Saturday	11	17
Sunday	13	19

1. Saturday is the given group.
2. Count the Saturday volunteers: 11 + 17 = 28.
3. Of those volunteers, 11 watered plants. Divide: 11/28.

Answer: 11/28

PRACTICE 6 problems

1 If a student brought lunch, what is the probability that the student chose fruit?

LUNCH CHOICES

Lunch	Fruit	Chips
Brought lunch	6	4
Bought lunch	8	2

ANSWER _____

2 If a student completed the puzzle, what is the probability that the student played the game?

GAME AND PUZZLE SURVEY

Game	Completed puzzle	Did not complete puzzle
Played	9	3
Did not play	5	7

ANSWER _____

3 If a student traveled on a rainy day, what is the probability that the student walked?

TRIPS TO SCHOOL

Weather	Bus	Walk
Sunny	8	6
Rainy	4	12

ANSWER _____

4 If a club member does not have a pet, what is the probability that the member belongs to Club B?

CLUB MEMBERS AND PETS

Club	Has a pet	No pet
Club A	7	5
Club B	9	3

ANSWER _____

5 If a student chose a sketch, what is the probability that the student arrived early?

ART WORKSHOP CHOICES

Arrival	Sketch	Photo
Early	12	8
Late	6	4

ANSWER _____

6 If a student chose a movie, what is the probability that the student watched the trailer?

SCREEN-TIME SURVEY

Trailer	Chose movie	Chose show
Watched	14	6
Skipped	4	8

ANSWER _____

APPLY IT Show your work

1 A school asked students how they heard about a basketball game and whether they attended. If a student attended, what is the probability that the student heard about it through a group chat?

BASKETBALL GAME SURVEY

Attendance	Group chat	Announcements
Attended	16	4
Did not attend	8	12

ANSWER _____

2 At a gaming club, players recorded whether they used headphones and beat a level. If a player used headphones, what is the probability that the player beat the level?

GAMING CLUB RESULTS

Result	Headphones	No headphones
Beat level	18	6
Did not beat level	9	12

ANSWER _____

CHALLENGE One step up

Each student belongs to one club. Find P(art club | joined showcase) and P(joined showcase | art club). Explain why the probabilities differ.

CLUB SHOWCASE

Club	Joined showcase	Did not join
Art	10	5
Robotics	6	9

WORK SPACE AND ANSWER

ANSWER KEY

Who Is in the Group?

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	If a student brought lunch, what is the probability that the student chose fruit?	**3/5**
2	If a student completed the puzzle, what is the probability that the student played the game?	**9/14**
3	If a student traveled on a rainy day, what is the probability that the student walked?	**3/4**
4	If a club member does not have a pet, what is the probability that the member belongs to Club B?	**3/8**
5	If a student chose a sketch, what is the probability that the student arrived early?	**2/3**
6	If a student chose a movie, what is the probability that the student watched the trailer?	**7/9**

PART 2 · APPLY IT

1. **4/5** There were 16 + 4 = 20 students who attended. Of those, 16 heard through a group chat, so the probability is 16/20 = 4/5.
2. **2/3** There were 18 + 9 = 27 players who used headphones. Of those, 18 beat the level, so the probability is 18/27 = 2/3.

CHALLENGE

P(art club | joined showcase) = 10/16 = 5/8, while P(joined showcase | art club) = 10/15 = 2/3. The first uses all 16 showcase participants, while the second uses all 15 art club members.

Accept equivalent fractions or correct decimal forms. For the challenge, the explanation must identify the two different given groups.